

ABSTRACT OF THE DISCLOSURE

A base node (100) and a base node (101) transmit a keep alive frame broadcast by a relay node 5 forming a communication medium (106) and a communication medium (107) from a port 1 and a port 2, monitor an arrival state of the keep alive frame at each port, and in normal operation, assume the two communication media connected to the port 1 and the port 2 as one node to 10 expand a communication band and at failure detection, continue communication by using only a communication medium connected to a port at which no failure is detected.